

## **APPENDIX B**

### **Environmental Trip Report**

# **Montgomery Reservoir**



# **ENVIRONMENTAL TRIP REPORT. MONTGOMERY RESERVOIR**

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## **INTRODUCTION**

A team of environmental specialists completed an initial field trip to the potential Montgomery Reservoir site on May 29, 2002. The field trip was the first task in the environmental study of several potential surface storage options identified for initial review during the Upper San Joaquin River Basin Storage Investigation. For initial consideration, the environmental review focused mainly on construction and potential upstream impacts associated with proposed surface storage sites. The site visit provided an opportunity to conduct preliminary reconnaissance of existing resources at the various locations for the following resource areas: terrestrial biology; aquatic biology and water quality; recreation; cultural resources; and land use.

This appendix includes a brief overview of the resource specialists' observations, trip logs prepared by team members, photographs taken during the field trip, and maps used to identify and review existing resources.

## **SUMMARY OF FIELD OBSERVATIONS**

This storage option would involve constructing a new dam along Dry Creek, a tributary to the Merced River from the north, downstream of Exchequer Dam. Water would be provided from the Merced River via an existing canal, and would be used in the area south of the Merced River. The new dam and reservoir would be situated on private property that is characterized by gently rolling hills comprised of open grassland, pasture and to a lesser extent, irrigated crops. Large homes are scattered throughout the area on relatively large parcels (e.g. greater than 5 acres). The Merced River and the town of Snelling are located about 3 miles south of the site.

### **Botany**

- This option would result in a significant amount of habitat loss due to the size of the reservoir (about 8,000 acres)
- Habitat types are not widely varied.
- Effects on riparian habitat would be low since much of the habitat has already been degraded.
- The potential for special status species could be high because of the presence of limestone and the possibility of vernal pools.

### **Wildlife**

- The major species of concern for this area would be San Joaquin kit fox and possibly loss of raptor foraging area.
- No nesting would occur here due to a lack of suitable nesting trees.

- Dry creek has slight vegetation along the shoreline with shallow standing water.
- The presence of substantial numbers of bullfrogs limits the possibilities of sensitive amphibian species such as the red-legged or foothill yellow-legged frogs.
- Observed cliff swallows under bridge along with blackbirds and meadowlarks (not sensitive species).

### **Aquatic Biology/Water Quality**

- Dry Creek may have intermittent flow; pools were the principal aquatic habitat type at the time of field visit.
- Substrate consisted of bedrock and gravel.
- The stream banks were eroded and supported little riparian vegetation probably because of cattle grazing.
- The stream appears to be eutrophic; large mats of algae covered the stream margins, particularly along pools.
- Many fish fry, many large bullfrog tadpoles, one crayfish and a small fish were found in the stream.
- The snail, *Physa*, which is generally associated with warm, eutrophic habitats and hard water, was abundant in the stream.
- The creek likely contains no significant aquatic biological resources, but database and literature searches should be conducted to confirm.
- Construction of a reservoir would create new aquatic habitat and fisheries opportunities, primarily for exotic fish species.
- Diversions from Merced River would potentially affect fisheries and water quality of the river and/or Lake McClure and Lake McSwain.

### **Recreation**

- The dam and reservoir would be located on private property. There are no developed recreation facilities in the area, but the presence of “pioneered” trails along the creek bank suggest some recreation activity occurs.
- Construction of this dam and reservoir is not expected to substantially affect recreation resources and/or opportunities along Dry Creek.
- Diversions from the Merced River could impact recreation resources and opportunities, depending on the location of the intake and the affect of withdrawals on flows in the Merced River.

## **Cultural Resources**

- Sparse riparian growth observed may not represent the pre-contact situation; the area probably included Valley Oak and more diverse vegetation than at present.
- Prehistoric sites are likely, associated with Dry Creek and riparian resources formerly present.
- One prehistoric site was observed (bedrock mortars [BRMs] on a rock outcrop at the edge of Dry Creek near La Grange Road).
- Historic sites are likely, associated with agricultural activities, and perhaps with mining activities toward the south side of the potential reservoir.
- A memorial roadside cross-marked with “KING BIG 9-30-69 3-13-00” was observed at the edge of La Grange Road near Dry Creek.

## **Land Use**

- Much of the area appears to be used for grazing.
- There are several large homes and ranches including a cluster of houses West of the potential dam location in the area of potential inundation.
- Travel on La Grange Road is likely to be disrupted during construction and the bridge over the creek would have to be rebuilt.

Field Trip Log - Botany		
<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	Jeff Glazner/Barry Anderson/David Stevens	
<b>Date:</b>	June 5 2002	

<b>Weather Conditions:</b>	Hot and dry
<b>Areas Covered (attach map with notations)</b>	
<b>Attachments</b>	
<b>Photo Log</b>	yes
<b>Photos</b>	yes
<b>Topographic Map(s)</b>	no

**Field Observations:**

**Existing Facilities:**

None, other than residences

**Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)**

Mostly annual grassland, pasture, and irrigated fields. Grasslands and pasture areas could have vernal pools. Limestone outcrops were identified by the geologist. Both vernal pools and limestone are known to harbor special status species, and several wetland and upland special status species are known to occur in the area. Dry Creek is probably intermittent, and it supports scattered willows and cottonwoods. No continuous riparian canopy was observed, and grazing degrades what is present.

**Need for additional (engineering/hydrological, or other) information on measures**

- Geology or soils information
- Spillway elevation and limits of inundation
- Locations of all saddle dams
- Location of diversion from Lake McClure
- Location of conveyance from Merced Falls Diversion Dam
- Location of new canal to Madera Canal
- Locations of realigned existing roads
- Location of work pads, access roads, and other construction areas

**Additional data needs (within each specific discipline)**

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- CNDDDB report
  - CNPS report
  - Ceres report
  - Field surveys for wetlands and special status species and habitats
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Field Trip Log – Wildlife		
<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	Dave Stevens, Stephanie Murphy	
<b>Date:</b>	June 4, 2002	

<b>Weather Conditions:</b>	Hot and dry
<b>Areas Covered (attach map with notations)</b>	Dry Creek area near La Grange Road and Fields Road, north of Snelling
<b>Attachments</b>	
<b>Photo Log</b>	
<b>Photos</b>	
<b>Topographic Map(s)</b>	

**Field Observations:**

**Existing Facilities:**

This project would involve constructing a new dam along Dry Creek, which would submerge Dry Creek and the surrounding area. The new dam and reservoir site are situated on private property, which is characterized by gently rolling hills comprised of open grassland, pasture and to a lesser extent, irrigated crops. Large homes are scattered throughout the area on relatively large parcels (e.g. greater than 5 acres). The Merced River and the town of Snelling are located about 3 miles south of the project area.

**Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)**

The major species of concern for this area would be San Joaquin kit fox and possibly loss of raptor foraging area. No nesting would occur here due to a lack of suitable nesting trees. Dry creek has slight vegetation along the shoreline with shallow standing water. The presence of substantial numbers of bullfrogs limits the possibilities of sensitive amphibian species such as the red-legged or foothill yellow-legged frogs. Observed cliff swallows under bridge along with blackbirds and meadowlarks (not sensitive species).

**Need for additional (engineering/hydrological, or other) information on measures**

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Need information on area that would be submerged by Montgomery Reservoir.

Need to know how the Merced River ties in to this project, as follows:

- How much flow would be diverted from the Merced and when?
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**Additional data needs (within each specific discipline)**

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a. Need to know current flow information for dry creek.

b. Need to know current surrounding usage – free range cattle?

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## Field Trip Log – Fish and Water Quality

<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	Philip Unger	
<b>Date:</b>	June 6, 2002	

<b>Weather Conditions:</b>	Hot and dry
<b>Areas Covered (attach map with notations)</b>	Dry Creek area near La Grange Road and Fields Road, north of Snelling
<b>Attachments</b>	
<b>Photo Log</b>	No
<b>Photos</b>	Yes
<b>Topographic Map(s)</b>	Yes

### Field Observations:

#### Existing Facilities:

This project would involve constructing a new dam along Dry Creek, which would submerge Dry Creek and the surrounding area. The new dam and reservoir site are situated on private property, which is characterized by gently rolling hills comprised of open grassland, pasture and to a lesser extent, irrigated crops. Homes are scattered throughout the area on relatively large parcels (e.g. greater than 5 acres). The Merced River and the town of Snelling are located about 3 miles south of the project area.

#### Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)

Dry Creek was the only aquatic environmental feature observed at either site (S19a or S19b). Flow in the creek was low (< 5 cfs) and pools was the principal aquatic habitat. Substrate consisted of bedrock and gravel. The stream banks were eroded and supported little riparian vegetation probably because of cattle grazing. Cattle droppings were abundant and probably create eutrophic conditions in the creek. Large mats of algae covered the stream margins, particularly along pools. Because of the sparseness of the vegetation and low topographic shading, the creek is exposed and summer water temperature is probably high. Except for pools, the stream is probably dry during late summer and autumn. The snail, *Physa*, which is generally associated with warm, eutrophic habitats, was abundant at site S19a. The presence of snails also suggests that water hardness is fairly high. Limestone outcrops that were identified at the site also

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suggest high water hardness. Many fish fry were also observed at this site. Many large bullfrog tadpoles, one crayfish and a small fish, probably a minnow, were seen at Site S19b.

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### **Need for additional (engineering/hydrological, or other) information on measures**

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Need information on exact area that would be submerged by reservoir.

Need information on range of seasonal flow conditions in Dry Creek.

Need the following estimates for proposed reservoir:

- Mean depth for each month, April – October.
- Mean surface area of shallow water habitat (less than 15 feet deep) in each month, April – October.
- Mean rate of water level fluctuation for each month, April – October.

Need to know how the Merced River ties in to this project, as follows:

- Where would the diversion on the Merced River be located?
  - How much flow would be diverted from the Merced and when?
  - Would diversions from the Merced result in changes in the operation (e.g. reservoirs levels) at Lake McClure or Lake McSwain.
  - If so, what would be timing and magnitude of reservoir fluctuations at these reservoirs?
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### **Additional data needs (within each specific discipline)**

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Need information on summer water temperatures and dissolved oxygen levels in Dry Creek and list of fish species likely present in the creek. Also, any existing water quality information. If the Merced River, Lake McClure or Lake McSwain is involved, additional information will be needed as follows:

- Fish species in affected reach of Merced River.
  - Fish species in Lakes McClure and McSwain.
  - Summer water temperatures in affected reach of Merced River.
  - Existing water quality data for the Merced River, Lakes McClure and McSwain.
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Field Trip Log - Recreation		
<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	Sandra Perry	
<b>Date:</b>	June 3, 2002	

<b>Weather Conditions:</b>	Hot and dry
<b>Areas Covered (attach map with notations)</b>	Dry Creek area near La Grange Road and Fields Road, north of Snelling
<b>Attachments</b>	
<b>Photo Log</b>	No
<b>Photos</b>	Yes
<b>Topographic Map(s)</b>	Yes

**Field Observations:**

**Existing Facilities:**

This project would involve constructing a new dam along Dry Creek, which would submerge Dry Creek and the surrounding area. The new dam and reservoir site are situated on private property, which is characterized by gently rolling hills comprised of open grassland, pasture and to a lesser extent, irrigated crops. Large homes are scattered throughout the area on relatively large parcels (e.g. greater than 5 acres). The Merced River and the town of Snelling are located about 3 miles south of the project area.

**Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)**

There are no recreation facilities situated in the immediate project area. However, “pioneered” trails are present along the creek banks to the west and east of the La Grange Road bridge crossing indicating some recreation occurs along the creek. Recreation activities probably include fishing, picnicking, and sunbathing. There is no evidence of overnight camping (eg. firerings).

La Grange Road is likely used by recreation visitors traveling between Merced and Don Pedro Reservoir, and potentially Lake McClure. La Grange Road may also be used by recreation visitors traveling to Yosemite.

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**Need for additional (engineering/hydrological, or other) information on measures**

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Need information on area that would be submerged by Montgomery Reservoir.  
Need the following information to determine whether travel along La Grange Road would be disrupted during the recreation season:

- Timing of dam construction
- Timing of La Grange Road and bridge reconstruction
- Travel routes for construction equipment

Need to know how the Merced River ties in to this project, as follows:

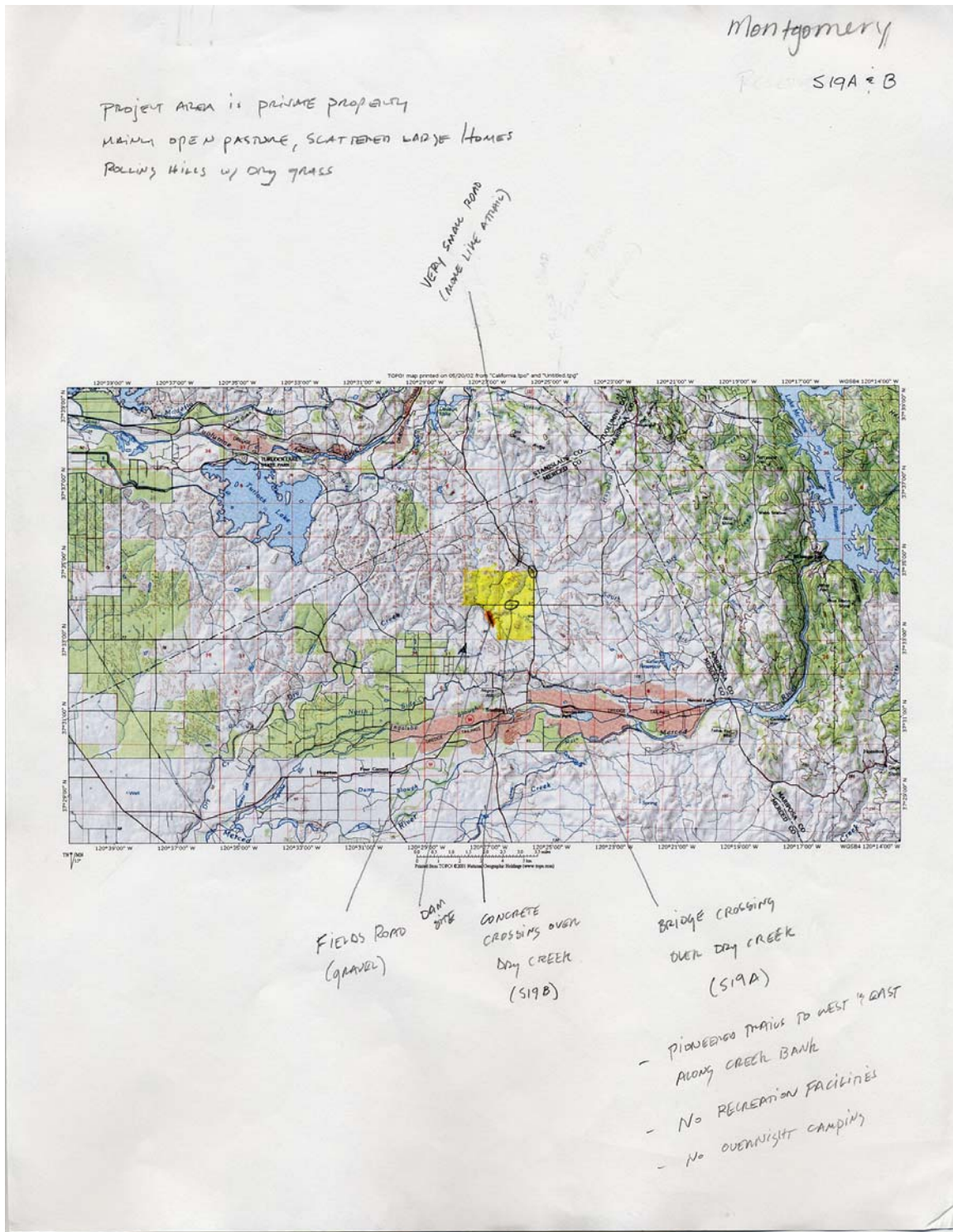
- Where would the diversion on the Merced River be located?
  - Where would the conveyance structure (e.g. flowline) be located?
  - Would the flowline be above ground (canal) or underground (tunnel)
  - How much flow would be diverted from the Merced and when?
  - Would diversions from the Merced affect the operation (e.g. reservoirs levels) at Lake McClure or Lake McSwain.
  - Timing of reservoir fluctuations at affected reservoirs
  - Timing and magnitude of diversions from the Merced
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**Additional data needs (within each specific discipline)**

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No additional information regarding recreation is needed if the project only involves Dry Creek. However, additional information will be needed if the Merced River or Lake McClure or Lake McSwain is involved, as follows:

- Location of existing recreation facilities along affected portion of the Merced and at affected reservoirs
  - Types of recreation activities that occur along the Merced and at the affected reservoirs
  - c. Use levels by activity along the Merced River and at the affected reservoirs
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## Field Trip Log – Land Use

<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	Irina Torrey	
<b>Date:</b>	June 12, 2002	

<b>Weather Conditions:</b>	Hot and dry
<b>Areas Covered (attach map with notations)</b>	Dry Creek area near La Grange Road and Fields Road, north of Snelling
<b>Attachments</b>	
<b>Photo Log</b>	Yes
<b>Photos</b>	Yes
<b>Topographic Map(s)</b>	No

### Field Observations:

#### Existing Facilities:

This project would involve constructing a new dam along Dry Creek, which would submerge Dry Creek and the surrounding area. The new dam and reservoir site are situated on private property, which is characterized by gently rolling hills comprised of open grassland, pasture and to a lesser extent, irrigated crops. Large homes are scattered throughout the area on relatively large parcels (e.g. greater than 5 acres). The Merced River and the town of Snelling are located about 3 miles south of the project area.

#### Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)

Much of the area appears to be used for grazing. Although there do not appear to be any homes immediately at the site of the new dam, there are several large homes in the area, at both locations, S19A and S19B. There is a cluster of houses on the West side of the dam location. Some of these homes may be within the inundation area.

The bridge at La Grange Road is likely to be inundated and would have to be rebuilt.

La Grange Road is likely used by recreation visitors traveling between Merced and Don Pedro Reservoir, and potentially Lake McClure. La Grange Road may also be used by recreation visitors traveling to Yosemite.

**Need for additional (engineering/hydrological, or other) information on measures**

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Need information on area that would be submerged by Montgomery Reservoir.  
Need the following information to determine whether travel along La Grange Road would be disrupted during the recreation season:

- Timing of dam construction
  - Timing of La Grange Road and bridge reconstruction
  - Travel routes for construction equipment
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**Additional data needs (within each specific discipline)**

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Need to know how many homes are in the reservoir inundation area or the immediate vicinity.

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## Field Trip Log – Cultural Resources

<b>Trip Log Number:</b>	S19	<b>Project No.:</b> 8004094
<b>Dates:</b>	May 29, 2002	
<b>Site Name:</b>	Montgomery Reservoir	
<b>Location:</b>	1A – Intersection of La Grange Road and Dry Creek at bridge Crossing 1B – Intersection of Fields Road and Dry Creek at concrete stream bed crossing	
<b>Prepared By:</b>	David White	
<b>Date:</b>	May 29 2002	

<b>Weather Conditions:</b>	Hot & dry
<b>Areas Covered (attach map with notations)</b>	La Grange Road, Fields Road. Vehicular reconnaissance of area, with two stops at road crossings of Dry Creek.
<b>Attachments</b>	
<b>Photo Log</b>	Yes – MWH 0205
<b>Photos</b>	Yes; nos. 1-6
<b>Topographic Map(s)</b>	USGS Snelling quad

### Field Observations:

#### Existing Facilities:

La Grange Road and Fields Road traverse project area; no existing dam

#### Existing Environmental Features as Appropriate to Discipline (hydrology; aquatic-water quality; terrestrial—plants; wildlife; recreation; cultural resources; land use; aesthetic)

##### Cultural resources:

Prehistoric: Sparse riparian growth may not represent pre-contact situation; the area probably included Valley Oak and more diverse vegetation than at present. Prehistoric sites likely, associated with Dry Creek and riparian resources formerly present. One site observed (BRMs on rock outcrop at edge of Dry Creek near La Grange Road).

Historic: Memorial roadside cross (KING BIG 9-30-69 3-13-00) observed at edge of La Grange Road near Dry Creek.

Other sites likely, associated with agricultural activities, perhaps with mining activities toward the south side of the potential reservoir.

#### Need for additional (engineering/hydrological, or other) information on measures

Need precisely mapped footprint of reservoir, with various potential dam levels; also need footprint of all associated project-related ground disturbance areas, to include but not be limited to project offices and maintenance buildings, construction set-up and lay-down areas, access roads, electric transmission lines, water conveyance structures, and all

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other project facilities.

Need to know if BuRec has previously studied a potential Dry Creek Reservoir (see project map showing a reservoir footprint in the area).

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**Additional data needs (within each specific discipline)**

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Need archaeological records search with California Historic Resources Inventory System (CHRIS) clearinghouse. Clearinghouse: Central California Info Center, CSU-Stanislaus, Turlock CA.

May need consultation with the BuRec cultural resource specialist regarding sites that may not be recorded with the CHRIS information center.

Also need brief review of archaeological and ethnographic literature pertaining to the area. Minimal level of effort: (1) to identify types of archaeological remains expected, time periods represented; and (2) to identify Native American tribes historically occupying the area, along with published information on major named villages or other ethnographic sites.

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Picture: P5290012 Montgomery Reservoir site (view W downstream, from La Grange Road bridge, May 29 2002, late morning)



Picture: P5290013 Montgomery Reservoir site (view W downstream, from La Grange Road bridge, May 29 2002, late morning)



Picture: P5290014 Montgomery Reservoir site (view E upstream, from La Grange Road bridge, May 29 2002, late morning)



Picture: P5290015 Montgomery Reservoir site (view E upstream, from La Grange Road bridge, May 29 2002, late morning)



Picture: P5290016 Montgomery Reservoir site (“KING BIG” memorial cross at La Grange Road bridge, May 29 2002, late morning)



Picture: P5290017 Montgomery Reservoir site (BRMs [Bedrock mortars] at La Grange Road bridge, May 29 2002, late morning)



Picture: P5290001 Looking south-west from La Grange road down stream Dry Creek, about 2 miles upstream of Montgomery Dam.



Picture: P5290002 Looking north-east from La Grange road upstream Dry Creek, about 2 miles upstream of Montgomery Dam.



Picture: P5290003 Looking east from La Grange road upstream Dry Creek, about 2 miles upstream of Montgomery Dam.



Picture: P5290004 Looking east from La Grange road upstream Dry Creek, about 2 miles upstream of Montgomery Dam.



Picture: P5290005 Looking south-east from La Grange road upstream Dry Creek, about 2 miles upstream of Montgomery Dam.



Picture P5290006 Looking south from near La Grange road about 2 miles upstream of Montgomery Dam. Dry Creek flows to the right.



Picture: P5290007 Looking south from near La Grange road about 2 miles upstream of Montgomery Dam. Dry Creek flows to the right.



Picture: P5290008 Looking north from near La Grange road about 2 miles upstream of Montgomery Dam.



Picture: P5290009 Looking east from near La Grange road about 2 miles upstream of Montgomery Dam.



Picture: P5290010 Looking south-east from near La Grange road about 2 miles upstream of Montgomery Dam.



Picture: P5290011 Looking west from below La Grange road down stream Dry Creek, about 2 miles upstream of Montgomery Dam. Note traveled path.



Picture: P5290012 Looking east from La Grange road at Dry Creek bank .



Picture: P5290013 Looking north-west from La Grange road upstream Dry Creek, about 2 miles upstream of Montgomery Dam. Note traveled path.



Picture: P5290014 Looking north from Field Road upstream Dry Creek about 1 miles upstream of Montgomery Dam site.



Picture: P5290015 Looking north from Field Road upstream Dry Creek about 1 miles upstream of Montgomery Dam site.



Picture: P5290016 Looking south from Field Road downstream Dry Creek about 1 miles upstream of Montgomery Dam site.



Picture: P5290017 Looking south from Field Road downstream Dry Creek about 1 miles upstream of Montgomery Dam site.



Picture: P5290018 Looking south-west from Field Road downstream Dry Creek about 1 miles upstream of Montgomery Dam site.



Montgomery

5/29/02



Montgomery

5/29/02



Montgomery, looking East

5/29/02



Montgomery, looking West

5/29/02



Montgomery Reservoir site, 5/29/02



Montgomery Reservoir site, Dry Creek, view downstream (SW) from La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, view from La Grange Road bridge of pool with algal mat, 5/29/02



Montgomery Reservoir site, Dry Creek, view upstream (NE) from La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, view upstream (NE) from La Grange Road bridge of pool with algal mats, 5/29/02



Montgomery Reservoir site, Dry Creek, gravel bar downstream of La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, view downstream (SW) from hill N of La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, gravel bar viewed from hill N of La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, view upstream (NE) from hill N of La Grange Road bridge, 5/29/02



Montgomery Reservoir site, Dry Creek, view upstream (N) from Fields Road ford, 5/29/02



Montgomery Reservoir site, Dry Creek, view downstream (S) from Fields Road ford, 5/29/02